Salinas Valley Basin
Groundwater Sustainability Agency

180/400-Foot Aquifer Subbasin Groundwater Sustainability Plan Amendment 2 Summary and Guide to Changes

INTRODUCTION

This summary compares the 2022 Groundwater Sustainability Plan Amendment 1 (2022 GSP or GSP Amendment 1) with the draft 2027 GSP Amendment 2 (GSP or GSP Amendment 2) for the 180/400-Foot Aquifer Subbasin (180/400 Subbasin, or Subbasin), Chapters 1 through 10. Amendment 2 supersedes both the original GSP and Amendment 1. It will be submitted to the California Department of Water Resources (DWR) with the Periodic Evaluation in January 2027. This high-level summary is intended to provide a guide to key changes but is not an exhaustive list of all edits, revisions, or updates.

Amendment 2 incorporates changes based on the improved understanding of the Subbasin and its conditions. These changes are derived from new data, studies, and updated models: the Deep Aquifers Study, airborne electromagnetic (AEM) surveys, the Salinas Valley Integrated Hydrologic Model (SVIHM version 1), and the corresponding updated Salinas Valley Operational Model (SVOM), and the Seawater Intrusion Model (SWIM). Amendment 2 addresses the Recommended Corrective Actions (RCAs) from DWR on SVBGSA's 2022 GSPs and revises the sustainable management criteria (SMC) for seawater intrusion, groundwater storage, and groundwater quality. With new data and updated tools, the estimate of projected annual loss of usable storage in the 180/400 Subbasin has been revised to 7,700 acre-feet/year (AF/yr) (previously 13,400 AF/yr). This is mainly attributed to seawater intrusion, the primary groundwater challenge in this Subbasin.

GSP Amendment 2 continues to describe a wide range of potential projects and management actions (PMAs) and adds priority and contingency categorization. Descriptions of several PMAs are updated based on feasibility studies that have been completed since GSP Amendment 1. GSP Amendment 2 describes the next phase of implementation, moving from a broad, unprioritized menu of PMAs in the original 2020 GSP and GSP Amendment 1, toward a prioritized set of PMAs that enable the Subbasin to reach sustainability by 2040. The GSP Amendment 2 aligns with the Valley-wide Integrated Implementation Strategy (IIS) that includes a preferred portfolio of PMAs. The goal of the preferred portfolio of PMAs is to avoid undesirable results and achieve or maintain sustainability in each subbasin in the Salinas Valley.

Several themes run through the GSP Amendment 2:

- **New data reshape the conceptual model.** AEM data and the Deep Aquifers Study update the hydrogeologic conceptual model (HCM) aquitard extents, cross sections, and Deep Aquifers' delineation. Groundwater elevation contours for the Deep Aquifers are now added with data from the new HCM and expanded monitoring network.
- **Monterey County Water Resources Agency (MCWRA) Groundwater Monitoring Program (GMP) is the new foundation of groundwater data collection.** The GMP integrates well registration, groundwater extraction reporting, water quality monitoring for seawater intrusion, groundwater level monitoring. and the Deep Aquifers Monitoring Plan.
- **Governance is clarified.** SVBGSA Board and committees' structures and roles are updated; coordination is established with the Marina Coast Water District GSA (MCWDGSA) and the Monterey County Groundwater Sustainability Agency (GSA).
- **Deep Aquifers come into focus as a priority for groundwater management.** Updated maps, change in storage, groundwater gradients, and representative monitoring site (RMS) wells are added. Deep Aquifers storage is now part of the Groundwater Storage SMC. New management actions are added to develop a demand management allocation program and prepare a Seawater Intrusion Response Plan to reduce extraction pressure on this principal aquifer.
- **Seawater intrusion continues to drive loss of groundwater in storage.** Seawater intrusion contributes to a majority (98%) of the loss of usable groundwater in storage.
- **Reducing pumping alone will not stop seawater intrusion by 2040.** Feasibility studies show that reducing pumping either through demand management or delivery of an in-lieu supply has a limited effect on seawater intrusion within SGMA timelines, and more substantial PMA are needed to mitigate seawater intrusion and achieve the minimum threshold.
- **From toolbox to implementation plan.** GSP Amendment 1 listed options that could achieve sustainability. GSP Amendment 2 uses completed studies, modeling, and demand management work to outline what SVBGSA intends to implement.

The sections that follow summarize the changes chapter by chapter, listing key parts that are new, revised, or removed. Section numbers in parentheses refer to GSP Amendment 2.

CHAPTER 1: INTRODUCTION

Chapter 1 includes governance details and describes coordination with the other 2 GSAs in the Subbasin. The chapter provides overview of the GSP Amendment 2 for the 180/400 Subbasin in the context of the broader Salinas Valley.

Table 1 summarizes key changes in Chapter 1.

Table 1. Key Changes in Chapter 1, Introduction

Topic	2022 GSP Amendment 1	2027 GSP Amendment 2 (draft)	GSP Section
Plan manager	Donna Meyers	Piret Harmon	1.2.1
Advisory Committee	25 members	Reconfigured in 2025: 6 Subbasin Committee, 4 partner agencies, up to 3 Board-appointed seats	1.2.2
Other GSAs described	MCWDGSA	MCWDGSA and Monterey County GSA	1.2.3, 1.2.4

New Content:

- Plan history: the original GSP was submitted in 2020. Amendment 1 was submitted in 2022 and resubmitted in 2025 with a 5-year periodic evaluation. Amendment 2 replaces both and will be submitted with the GSP 2027 Periodic Evaluation (1.1).
- Under the MCWDGSA agreements, SVBGSA is responsible for the 180/400 GSP, and a Steering Committee meets at least quarterly (1.2.3).
- Monterey County GSA (1.2.4) covers the roughly 400-acre CEMEX site. Its authority was affirmed in *City of Marina v. County of Monterey* (2023). SVBGSA manages this site under a 2020 Cooperation Agreement as part of the overall 180/400 Subbasin management.
- Coordination (1.3) adds a memorandum of understanding (MOU) and data collection agreement with MCWRA and describes coordination with the adjacent Seaside Groundwater Basin and Pajaro Valley Groundwater Basin, and with land use agencies.

Revised Content:

- SVBGSA Board of Directors seats are described. The Planning Committee is listed as not currently active. The Advisory Committee was reconfigured in 2025 (1.2.2).
- The planned Integrated Implementation Plan is now the IIS. The goal is Sustainable Groundwater Management Act (SGMA) compliance across all six subbasins by 2040/2042 and sustainability through 2070 (1.2.2).

CHAPTER 2: COMMUNICATION AND PUBLIC ENGAGEMENT

Chapter 2 is shorter and focused on how communications and public engagement are now conducted. Governance is moved to Chapter 1, and the PMA list now points to Chapters 9 and 10.

New Content:

- Updates include the 2024 Subbasin Committee Program, the 2025 Advisory Committee refocus, and the process for updating the GSP. The committee is renamed the 180/400 Subbasin Committee with a clarified role (2.3, 2.4).
- Periodic evaluations are added as an opportunity for the GSAs to communicate how GSP implementation is progressing (2.5.1).
- New tools for communication and engagement include hybrid Zoom meetings, StoryMaps, Instagram, YouTube, paid advertising, fliers, and bilingual materials with interpretation (2.5.2, 2.5.6).
- A summary of engagement actions now goes in each annual report, tied to the annual work plan and budget. It replaces the 2022 list of evaluation questions (2.5.8).
- Salinas Valley Water Leadership Institute (2025–2026) is added as a key community engagement program SVBGSA developed and held in partnership with the Environmental Defense Fund and local organizations during the first phase of GSP implementation (2.6).

Revised Content:

- Stakeholder lists add the Community Water Center, the Seaside Watermaster, the Central Coast Wetlands Group (CCWG), and others (2.2).
- Agricultural production value changes from $4.25 billion to $5 billion (2.2).
- Disadvantaged community (DAC) data are updated to the 2019–2023 American Community Survey (ACS). In the Subbasin, 28.1% of the population lives in a DAC by block group, and 11.5% by census tract (2.6).

Removed Content:

- The governance section (moved to Chapter 1), the planning-phases graphics (previous Figure 2-1), and the list of PMAs. Outreach activities such as basin tours, Facebook Live, and tax-bill mailings that are not being utilized are removed.

CHAPTER 3: DESCRIPTION OF PLAN AREA

Chapter 3 is updated with 2024 land use, MCWRA's new GMP, and a full conjunctive use section. Table 2 summarizes key changes in Chapter 3.

Table 2. Key Changes in Chapter 3, Description of Plan Area

Topic	2022 Amendment 1	2027 Amendment 2 (draft)	GSP Section
Land use data	2019	2024	3.1.3
Well counts	OSWCR: 1,514 wells	MCWRA registration: 700 wells (OSWCR data also included in the chapter)	3.4
Conjunctive use	1-paragraph SVWP summary	Full section on reservoirs, CSIP, SRDF	3.3
Groundwater Monitoring Program	—	New: MCWRA Ordinance 5426 (2024)	3.5.1

New Content:

- Subsections on MCWRA authority and utilities regulated by the California Public Utilities Commission (3.1).
- Conjunctive Uses (3.3), covering reservoir licenses, release operations of 70–550 cubic feet per second, the Castroville Seawater Intrusion Project (CSIP; since 1998), and the Salinas River Diversion Facility (SRDF; since 2010).
- GMP (3.5.1), adopted in 2024 under MCWRA Ordinance 5426, combines data collection for well registration, groundwater extraction, water quality for seawater intrusion, groundwater levels, and the Deep Aquifers Monitoring Plan.
- The County of Monterey's Salinas Valley Basin Investigation was completed and found that demand has increased higher than 2010 General Plan projections, leading to increased groundwater pumping and continued seawater intrusion. Demand of 485,000 AF/yr was projected to reach 518,000 AF/yr by 2030, and the study identified seawater intrusion advancing 210–240 acres/yr (3.1.4).

Revised Content:

Table 3 summarizes revised values in Chapter 3.

Table 3. Revised Values in Chapter 3, Description of Plan Area

Item	2022 Amendment 1	2027 Amendment 2 (draft)
Top crops	Lettuce, strawberries, broccoli (2017)	Strawberries, leaf lettuce, head lettuce (2025)
Wells: domestic / production / public supply	691 / 780 / 43 (OSWCR)	MCWRA registration after first 6 months: 64 / 591 / 45 (OSWCR data also in chapter)
Urban water management plans	2015	2025

Chapter 3 also revises the following content:

- MCWRA's authority under the Agency Act is described in more detail (3.1). Tribal representation is identified through the Native American Heritage Commission.

- Diversion reporting moves from the Electronic Water Rights Information Management System (eWRIMS) to the California Water Accounting, Tracking, and Reporting System (CalWATRS) (3.2).

CHAPTER 4: HYDROGEOLOGIC CONCEPTUAL MODEL

Chapter 4 identifies AEM data as a key source for the HCM update. Three AEM surveys (2020, 2022, and 2023), the Deep Aquifers Study, and the updated groundwater flow model layering based on AEM and additional analyses replace older well-log interpretations of aquifer layering. Amendment 2 incorporates new mapping of groundwater-dependent ecosystems (GDEs) and locations of interconnected surface water (ISW) (4.3.4). While key data gaps are filled and understanding is sufficient for management, further information about aquifer properties would continue to refine the understanding of how the principal aquifers function (4.12). Table 4 summarizes key changes in Chapter 4.

Table 4. Key Changes in Chapter 4, Hydrogeologic Conceptual Model

Topic	2022 Amendment 1	2027 Amendment 2 (draft)	GSP Section
Main HCM data	Well logs, older cross sections	3 AEM surveys, Deep Aquifers Study, offshore and bedrock updates, aquitard thin spots added, updated locations of ISW and GDEs	4.2, 4.3

New Content:

- New hydrogeologic cross sections A-A′, B-B′, and C-C′ (Figures 4-9 to 4-11) are built from AEM and new data analyzed, and show the updated groundwater model layers, with seawater intrusion shown as hatching (4.3).
- A hydrostratigraphic units table (Table 4-1) that lines up the geologic units with the aquifers and aquitards in the Subbasin.
- Seawater intrusion advancement rates: The 180-Foot Aquifer advanced 360 acres/yr from 1944 to 2011, then slowed to 30 acres/yr from 2011 to 2026. The 400-Foot Aquifer advanced 390 acres/yr from 2011 to 2026, largely from vertical migration (4.11). There has been no seawater intrusion observed in the Deep Aquifers to date (4.3.1.6).

Revised Content:

- Aquitards: the Salinas Valley Aquitard is refined based on well logs and AEM and now showed with equivalent shallow clays. The 180/400 Aquitard extent is mapped and incorporates known thin spots and holes. The 400/Deep Aquitard that defines the extent of the Deep Aquifers is now mapped from the Deep Aquifers Study (4.3.1).

- 400-Foot Aquifer is encountered between 270 and 650 feet below ground surface – deeper than previously known in the southern the Subbasin, which increases the thickness of the 400-Foot Aquifer in that area (4.3.1).
- Deep Aquifers are no longer described as poorly studied (4.3.1).
- Revised ranges for aquifer hydraulic conductivity from SVIHM, slug tests, and specific capacity based on observed and simulated values. Average values are 120-240 ft/day in the 180-Foot, 60 ft/day in the 400-Foot, and 10 ft/day in the Deep Aquifers (4.3.1.9).
- ISW mapping now indicates areas connected in more than 10% of months over 1968–2022, identified with the revised SVIHM. In the 2022 GSP, the threshold was more than 50% of months, in part due to being based on a provisional model (4.3.4).
- Potential GDEs are now mapped by CCWG (2026) based on the Natural Communities Commonly Associated with Groundwater (NCCAG) Dataset where the depth to groundwater table is high enough to support the above ecosystems and where the Salinas Valley Aquitard is not present. The GDE species table lists species that directly depend on groundwater or have an unknown reliance on it, with 12 species instead of 26. The table focuses on species in the 180/400 Subbasin, updated from the entire Monterey County in the 2022 GSP and without indirectly dependent species (Table 4-2).
- The base of the Subbasin was updated with new data and expanded to include updates to offshore geology (4.2.5).

Removed Content:

- Natural recharge estimates (inflows and outflows) are now only in the water budget chapter (Chapter 6).
- HCM data gaps were removed and marked as addressed; areas with uncertainty still noted.

CHAPTER 5: GROUNDWATER CONDITIONS

Conditions have not been revised unless the understanding of them has changed. The GSP baseline remains 2015–2020 – these were renamed from “current conditions” to GSP baseline conditions. Historical conditions still refer to prior to 2015. Amendment 2 refers to the annual reports and periodic evaluations for information on more recent conditions. The largest changes are new Deep Aquifers data and a recalculation of loss of groundwater in storage.

New Content:

- Deep Aquifers contour maps for August and fall 2025, made possible by 3 wells installed in 2023 and existing wells being added to the monitoring network (5.1.2). There were insufficient monitoring wells in 2022 to develop contours in the earlier GSPs.
- A vertical gradient analysis using 3 wells grouped across the principal aquifers. It shows downward gradients from the 180-Foot to the 400-Foot to the Deep Aquifers, after the 2012–2016 drought and increases in pumping (5.1.4).
- Development of the SWIM (5.3.4).
- Analyses of the relationship between changes in water quality, groundwater levels, and extraction. At the subbasin scale, groundwater pumping and groundwater level declines are not driving changes in water quality variability (5.4.3).
- Method for removing double-counted diversions was updated based on further SVBGSA work and collaboration with MCWRA on extraction reporting (5.7.5).

Revised Content:

- Annual and cumulative groundwater storage change figures that are separated by aquifer rather than aggregated (5.2.2).
- Storage change from the 2022 GSP is updated by using storage coefficients from SVIHM v1 rather than the provisional SVIHM. The model calculations of total storage change for 1995–2019 is revised from -13,320 to -12,670 AF/yr; for 2019–2020 it is revised from -14,210 to -8,090 AF/yr (5.2).
- The water quality comparison table now uses the stricter of the Title 22 and Basin Plan limits. For example, the chloride limit for an irrigation well is 106 mg/L (Basin Plan) instead of 350 mg/L (Title 22). Hexavalent chromium, gross alpha radioactivity, and sodium are added (5.4.3).
- Updated Active Contamination Sites table with 10 sites as of 2026 (5.4.2).
- ISW depletion due to pumping was rerun with SVIHM v1, supporting an analysis of seasonality and interannual variability. The Salinas River average depletion due to pumping is now 36,400 AF/yr (water year [WY] 1980–2022). The analysis separates conservation release and non-release periods for the Salinas River depletion, noting that depletion from conservation releases are managed in part for recharge (5.6).
- Water use covers WY 2021–2025, with totals of 114,110 to 145,520 AF/yr. Rural domestic use is estimated as 660 AF/yr, at 0.35 AF/yr per connection (Table 5-11).

- The method for removing double-counted diversions was updated based on further SVBGSA work and collaboration with MCWRA on extraction reporting (5.7).

CHAPTER 6: WATER BUDGETS

Every water budget component is different because the groundwater flow models were updated and reporting time periods are now different. The GSP Amendment 1 water budgets required adjustment of SVIHM pumping to better match reported Groundwater Extraction Management System (GEMS) data. This adjustment is no longer needed since the SVIHM v1 pumping is better calibrated to GEMS data. Historical loss of usable storage is still mostly due to seawater intrusion, which accounts for 98% of the decline.

Water Budget Time Periods:

The water budget time periods were revised in GSP Amendment 2 based on additional years included in the model, analysis of average hydrology, and analysis of land use. The current periods analyzed in both Amendments are both noted as having drier than average hydrology (6.1.2).

Table 5. Water Budget Time Periods

Budget	2022 GSP Amendment 1	2027 GSP Amendment 2 (draft)
Historical	WY 1980–2016	WY 2003–2020
Current	WY 2016	WY 2021–2022
Projected	47 years averaged under 2030 and 2070 climate change	SVOM baseline WY 2023–2072, no climate change, averaged over WY 2040–2064; sea level rise included

The projected period in GSP Amendment 1 repeated 47 years of historical climate and added DWR climate change at 2030 and 2070. For GSP Amendment 2, the projected water budget period is now generated using a SVBGSA updated versions of the SVOM run with a repeated sequence of years with conditions equivalent to long-term average historical conditions, no climate change, 2022 land use, and sea level rise. Projected budgets now include Association of Monterey Bay Area Governments (AMBAG) urban growth and 2022 land use. The effects of climate change are added in a separate section for the same projected period.

Key Numbers:

All water budget numbers are revised due to the updated model versions used in the analysis and the water budget time periods used. Table 6 summarizes key values that changed substantially.

Table 6. Key Revised Values in Water Budgets

	2022 Amendment 1	2027 Amendment 2 (draft)	GSP Section	Explanation
Historical average decrease in storage	-13,400 AF/yr (water level and seawater intrusion storage loss estimated using observed data)	-10,600 AF/yr (storage loss estimated using model for water levels and observed data for seawater intrusion)	6.3.2	Storage loss in principal aquifers (not aquitards or shallow sediments) Storage is highly sensitive to water budget periods Updated model produces storage estimate consistent with observed data
Historical sustainable yield	101,400–123,200 AF/yr	110,600 AF/yr	6.3.3	Results are similar, however, the sustainable yield in 2022 Amendment was effectively estimated using observed data. The updated model no longer needs to be adjusted to match observed data
Net subsurface flow to the Eastside from the 180/400 Subbasin	-3,600 AF/yr	-38,300 AF/yr	6.3.2	The updated model with improved calibration of pumping and water levels resulted in significantly larger flows between subbasins
Net subsurface flow to the 180/400 from the Forebay Subbasin	3,100 AF/yr	28,800 AF/yr	6.3.2	The updated model with improved calibration of pumping and water levels resulted in significantly larger flows between subbasins
Net subsurface flow from Monterey to 180/400 Subbasin	-1,900 AF/yr (i.e. from 180/400 to Monterey Subbasin)	27,800 (i.e. from Monterey to 180/400 Subbasin)	6.3.2	Monterey Subbasin was poorly calibrated in provisional SVIHM. Revised models improve calibration and reflect observed groundwater flow direction
Projected pumping	124,600 to 130,300 AF/yr (adjusted using reported data)	108,400 AF/yr (simulated in model)	6.4.3	The pumping calibration in the updated historical model was improved to more accurately match GEMS reported pumping. Projected pumping takes the same setup and estimates future pumping using future climate

	2022 Amendment 1	2027 Amendment 2 (draft)	GSP Section	Explanation
Projected average decrease in storage (minus symbol denotes decrease)	-13,400 AF/yr	-7,700 AF/yr	6.4.3	2022 decrease in storage was based on historical observed loss of storage because provisional model was not well calibrated. Models used for 2027 estimates are better calibrated.
Projected sustainable yield	111,200 AF/yr (2030); 116,900 AF/yr (2070)	100,200 AF/yr; sustainable yield analysis included in Appendix 6A – *will be corrected to 100,800 AF/yr in final version*	6.4.4	Updates to the projected models provide a more realistic estimate of future conditions. Projected sustainable yield based on calculations of projected pumping and projected average change in storage.

New Content:

Chapter 6 adds 2 new sections:

Climate Change Scenarios (6.5) runs 3 DWR scenarios against the projected baseline. For the full Subbasin groundwater storage change due to groundwater levels (i.e. not just principal aquifers), this results in net storage change due to groundwater levels of -500 AF/yr (baseline), -100 AF/yr (central tendency), 0 AF/yr (wet–moderate warming), and -1,900 AF/yr (dry–extreme warming). Loss of usable storage due to seawater intrusion would be in addition to these losses.

Overdraft Assessment (6.6) uses 15- and 20-year observed groundwater level trends (Appendix 6B). The Deep Aquifers are in overdraft: all 7 wells show declines. The 400-Foot Aquifer is likely in overdraft, and the 180-Foot Aquifer is not. The 2022 GSP Amendment 1 noted the Subbasin was in overdraft but did not complete an analysis of trends or overdraft by aquifer.

CHAPTER 7: MONITORING NETWORKS

The monitoring networks grew, mainly in the Deep Aquifers. Several 2022 GSP data gaps are now filled, and a new network covers GDEs.

Table 7 summarizes the changes in monitoring network in Chapter 7.

Table 7. Monitoring Network Comparison for Chapter 7

Network	2022 Amendment 1	2027 Amendment 2 (draft)	Amendment 2 Section
Groundwater level RMS wells	91 wells (180-Foot Aquifer: 35 / 400-Foot Aquifer: 45 / Deep Aquifers: 11)	100 in network (180-Foot Aquifer: 32 / 400-Foot Aquifer: 47 / Deep Aquifers: 21); 91 with SMC (new wells will have SMC added after initial years of data)	7.2, 8.6
Seawater intrusion wells	136	142	7.4
ISW wells	2	2 (1 replaced by new well 180/400-ISW-1, installed 2024)	7.7
GDE monitoring	None	Annual imagery review and field visits every 5 years	7.8.1

Revised Content:

- Groundwater levels (7.2): Deep Aquifers RMS wells are part of the Deep Aquifers Monitoring Plan and include the newly installed DA-1, DA-2, and DA-3 wells. Two Deep Aquifers data gaps and one 180-Foot Aquifer data gap are identified.
- Seawater intrusion (7.4): The 2022 Deep Aquifers data gap is removed. The 250 milligrams per liter (mg/L) chloride isocontour is noted as advancing in the northern 180-Foot Aquifer east of Elkhorn Slough.
- Water quality (7.5): Drinking water well data is from active Division of Drinking Water (DDW) wells and ILP on-farm domestic wells. ILP agricultural wells are included provisionally until the CCRWQCB approves the groundwater quality trend monitoring workplan. Sampling now follows Ag Order 4.0.
- Interconnected surface water (7.7): 1 ISW monitoring well dropped from the network because it is located within the spatial extent of the Salinas Valley Aquitard and a new well was installed. Marked as having no remaining data gaps.
- Extraction (7.8.2): Previous ordinances are replaced by MCWRA Ordinance 5426. Reporting is shifted to a water-year basis.
- Diversions (7.8.3): Reporting moves from eWRIMS to CalWATRS starting in WY 2025.
- Data management (7.9): California Statewide Groundwater Elevation Monitoring (CASGEM) transitioned into the SGMA Portal, ILP data from CCRWQCB are added, and U.S. Geological Survey (USGS) streamflow now are downloaded through a live link.

CHAPTER 8: SUSTAINABLE MANAGEMENT CRITERIA

The biggest SMC changes are to seawater intrusion, groundwater storage, and water quality sustainability indicators. The groundwater level SMC clarifies that it is not set to stop seawater intrusion and that PMAs will be needed to stop seawater intrusion (8.5, 8.6).

Table 8 summarizes key SMC changes in Chapter 8.

Table 8. Key Changes in Chapter 8, Sustainable Management Criteria

Topic	2022 Amendment 1	2027 Amendment 2 (draft)	GSP Section	Reason for Change
Storage minimum threshold	626,000 AF below measurable objective	15,700 AF below measurable objective	8.7	**Same approach**, **revised basis**: Minimum threshold is calculated based on groundwater level and seawater intrusion SMC, so this reflects revised seawater intrusion measurable objectives
Seawater intrusion measurable objective	Highway 1 line	Same as minimum threshold (2017 500 mg/L isocontour)	8.8	**Not achievable:** feasibility study analyses showed that even with very large project, pushing seawater back to Highway 1 is not achievable by 2040. Original GSP noted this would be changed with further study.
Water quality SMC	Number of DDW or ILP wells over regulatory limit due to GSA action	Percentage of DDW or ILP wells over regulatory limit due to GSA action or extraction	8.9	**Addressed DWR Recommended Corrective Action:** DWR directed GSA to change SMC. Additional refinements made to add process to determine undesirable result, prepare for monitoring network changes, and incorporate lessons learned.

Revised Content:

Changes to the SMC for the chronic lowering of groundwater levels (8.6) include the following:

- The method is the same: the minimum threshold is 1 foot above 2015 levels, and the measurable objective is 2003 levels. Per-well values and the well list were revised. The network now has 91 wells with SMC; 9 newer wells will get SMC once they have about 5 years of data.
- New domestic well assessment of the effect of minimum thresholds on domestic wells conducted with the active domestic wells from the MCWRA database. Of the total 64 active domestic wells, the 27 that had known well depths or screen depths were used to

compare to minimum threshold groundwater levels. All 27 keep at least 25 feet of water at the minimum threshold.

Changes to the SMC for reduction in storage (8.7) include the following:

- Method is the same: change in groundwater in storage is based on the difference between the minimum thresholds and measurable objectives for groundwater levels and seawater intrusion. Greatest change in the value is due to the seawater intrusion measurable objective that is now the same as the minimum threshold in the 180-Foot and 400-Foot Aquifers.
- The minimum threshold changes from 626,000 acre-feet to 15,700 acre-feet below the measurable objective. It is now calculated using cell-by-cell from the model grid and storage parameters (e.g. adding in spatial variability) and includes the Deep Aquifers.
- Using groundwater levels as a proxy within the storage calculation is justified similar to in 2022 but with the revised model, which has a stronger correlation ($R^2 = 0.777$) than the previously used provisional model. At 2020 conditions, storage was 2,600 acre-feet below the minimum threshold.

Changes to the SMC for seawater intrusion (8.8) include the following:

- Feasibility study analyses showed that even with a very large project, pushing seawater back to Highway 1 is not achievable by 2040. The original GSP noted this could be changed with further study.
- The definition of significant and unreasonable clarifies that any additional intrusion means expansion of the intruded area since 2017, the minimum threshold. The minimum threshold is unchanged: the 2017 500 mg/L chloride isocontour. The measurable objective now equals the minimum threshold for the 180-Foot and 400-Foot Aquifers, with no intrusion in the Deep Aquifers. In 2022, the Deep Aquifers minimum threshold was identified at Highway 1 (8.8).

Changes to the SMC for degraded water quality (8.9) include the following:

- To address DWR's required RCA, the undesirable result statement was revised to not only be if degradation occurs due to GSA action, but also if it is due to extraction, regardless of whether the GSA regulates extraction or not.
- Minimum thresholds are now based on a percentage of monitored wells, instead of a number of monitored wells, that are over the Title 22 drinking water limit (MCL or SMCL) or Basin Plan objective, whichever is stricter.

- A constituent watchlist (Table 8-5) replaces the old constituent list. The table identifies constituents of concern (COCs) analyzed to determine if a constituent exceeds the limit in at least 3 of 5 years, in at least 10% of wells, and in at least 5 wells. This approach focuses SMC on subbasin-wide management where degradation is not temporary.
- A new 5-step screening process (Figure 8-11) clarifies how minimum threshold exceedances will be evaluated to determine if they constitute an undesirable result.

The SMC for subsidence (8.10) are unchanged.

The SMC for interconnected surface water (8.11) remains the same. This section clarifies that the significant and unreasonable condition is shallow groundwater levels below those observed in 2015 rather than surface water depletion greater than 2015 since the SMC relies on shallow monitoring wells.

CHAPTER 9: PROJECTS AND MANAGEMENT ACTIONS

Amendment 2 incorporates updates from completed feasibility studies, adds new PMAs that have been identified since Amendment 1, and assigns PMAs into priority and contingency actions. This Subbasin faces seawater intrusion and declining groundwater levels, with undesirable results in the Deep Aquifers. Achieving sustainability depends on a combination of projects and management actions with both demand management and projects that improve groundwater conditions and diversify water supplies.

Table 9 summarizes key changes in Chapter 9.

Table 9. Key Changes in Chapter 9, Projects and Management Actions

Topic	2022 Amendment 1	2027 Amendment 2 (draft)	GSP Section
Overall approach	Broad menu of PMAs; not prioritized, not all need implementing	Same approach in Chapter 9. In Chapter 10, priority, and contingency PMAs; priority PMAs are the preferred IIS pathway	Chapters 9–10
Management actions	6 MAs; demand planning largely conceptual	9 MAs; Demand Management Framework, Deep Aquifers pumping allocations/limits, Seawater Intrusion Response Plan and Rural Residential Well Mitigation	9.4
Deep Aquifers	Complete the Deep Aquifers Study	Develop Deep Aquifers allocations/ pumping limits	9.4.4
Projects	8 conceptual projects	6 projects, most updated based on feasibility studies	9.5

New Content:

- MA5 through MA7 shift focus toward actions can be taken in the event of impacts on beneficial users, not solely on achieving SMC.

- MA5 Rural Residential Demand Management Water Use Efficiencies offers voluntary efficiency services and incentives to rural residential groundwater users.
- MA6 Seawater Intrusion Response Plan is added to set triggers and response measures if intrusion reaches new areas or chloride makes usable wells unusable.
- MA7 Rural Residential Well Mitigation is added to assist rural residential drinking water users through monitoring, well registration, dry-well reporting, and drinking-water assistance coordination.
- M4 Reservation Road Pilot Desalination Plant (0.3 MGD) would rehabilitate the existing plant for about 300 AF/yr of MCWD potable supply in lieu of groundwater.
- M5 Aquifer Storage and Recovery at Armstrong Ranch adds an opportunity for use of MCWDGSA's Armstrong Ranch property to be used for recharge, storage in the perched aquifer and recovery with a maximum infiltration capacity of about 2,500 AF/yr.

Revised Content:

- MA1 changes from Demand Planning to Demand Management and Planning. MA1 includes work completed since Amendment 1 with the development of the Demand Management Framework, and related economic analyses. The Demand Management Framework adds stages, triggers, 6 agricultural and 4 domestic measures, administrative requirements, funding approaches, and accounting.
- MA2 expands fallowing, fallow bank, and agricultural land retirement to also include multi-benefit land repurposing.
- MA4 Deep Aquifers management changes from completion of the Deep Aquifers Study to a management action to develop a Deep Aquifers allocation program with sustainable pumping targets.
- MA8 MCWRA Reservoir Operation continues to emphasize collaboration with MCWRA and shifts to evaluation of reservoir operation scenarios if a new project necessitates altering reservoir operations or interconnected surface water compliance.
- P2 CSIP System Optimization recognizes the first phase of work completed since Amendment 1 and adds 3 new CSIP capital improvement projects.
- Modify M1W Recycled Water Plant is removed as a standalone project and consolidated under P2 CSIP Optimization.
- P3 New Seawater Intrusion Project/CSIP Expansion, is updated from CSIP Expansion which identified a new service area of 3,500 acres with up to 7,000 AF/yr, to the NSIP,

which could serve up to 17,600 acres with 5,320–25,080 AF/yr of in-lieu supplies to areas affected by or at risk of high chloride concentrations.

- P4 Brackish Groundwater Restoration Project (BGRP) updates the Amendment 1 Extraction Barrier and Regional Municipal Supply. BGRP combines both projects into one, with an extraction barrier, brackish desalination, and injection or direct delivery. BGRP will create a hydraulic barrier to seawater intrusion and reverse the inland flow gradient, while creating a new supply. The BGRP Small Scenario yields about 28,000 AF/yr of treated water for injection or direct delivery.
- P5 Coastal Injection/ASR is an update to Seasonal Release with ASR. This project uses a modified MCWRA Permit 11043 diversion to allow seasonal storage and Salinas River diversions with injection into the 400-Foot Aquifer or northern Eastside, at 5,100–9,700 AF/yr.
- P6 Irrigation Water Supply Project, also called the Somavia Road Project remains about 3,000 AF/yr of estimated supply. Further assessment of the area did not conclusively indicate rapid, additional recharge at Somavia Road. The project has additional uncertainty because of the need to ensure that a project would not induce stream depletion, reduce flows to the SRDF, or reduce reservoir storage or surface water flows needed for a variety of purposes.
- ES1 Castroville and Eastside Canals replaces both Eastside 11043 diversions at Chualar and Soledad, using a modified MCWRA Permit 11043 to allow seasonal storage, Salinas River diversions at the Castroville Canal Intake and central Eastside recharge basins.
- Modeling of PMA effects is updated from use of the NSV model, provisional SVOM, and Monterey Subbasin model to use of SVOM v1 or SWIM v3. USGS finalized SVOM v0 in April 2025; SVBGSA updated it to v1 in October 2025.
- Some cost estimates are updated from planning-level estimates (+50%/-30% accuracy, escalated 20% from 2019) to lifecycle costs for PMA with completed feasibility studies. These include capital, operation and maintenance (O&M), replacement, contingency, escalation to July 2030, and a 3.25% discount rate. Cost increases reflect more developed project concepts and costing methods, not solely from inflation.

Removed Content:

- Corral de Tierra Pumping Allocation and Control is removed from the 180/400 Subbasin Plan. This management action is updated in the Monterey Subbasin Plan to Demand Management and Planning like the 180/400 GSP.

Tables 10 through 12 compare the management actions, projects, and cross-boundary projects in the 2022 GSP and 2027 Amendment 2 draft.

Table 10. Comparison of Management Actions in 2022 GSP and 2027 Amendment 2 draft

2022 GSP Amendment 1	2027 GSP Amendment 2 (draft)	Key Change
MA1 Demand Planning	MA1 Demand Management and Planning	Expanded from general planning into an umbrella DM program incorporating the Demand Management Framework and potential activation of specific measures.
MA2 Fallowing, Fallow Bank, and Agricultural Land Retirement	MA2 Fallowing, Fallow Bank, Agricultural Land Retirement, and Multi-Benefit Land Repurposing	Adds Multi-Benefit Land Repurposing
MA3 Conservation and Agricultural BMPs	MA3 Conservation and Agricultural BMPs	Retained and updated
MA4 Reservoir Reoperation	MA8 MCWRA Reservoir Operation	Emphasizes MCWRA collaboration to evaluate reservoir operation scenarios if a new project necessitates altering reservoir operations or for interconnected surface water compliance
MA5 Undertake and Operationalize Guidance from Deep Aquifers Study	MA4 Demand Management: Deep Aquifers Allocations/Pumping Limits	Shifts from study to pumping allocations/limits
MA6 MCWRA Drought Reoperation	MA9 MCWRA Drought Reoperation	Retained and updated
—	MA5 Rural Residential Demand Management Water Use Efficiencies	New; voluntary efficiency services and incentives
—	MA6 Seawater Intrusion Response Plan	New; triggers and response measures for new or worsening seawater intrusion
—	MA7 Rural Residential Well Mitigation	New; assesses impacts to rural residential drinking-water users

Table 11. Comparison of Projects in 2022 GSP and 2027 Amendment 2 draft

2022 Amendment 1	2027 Amendment 2 (draft)	Key Change
P1 Multi-Benefit Stream Channel Improvements	P1 Multi-Benefit Stream Channel Improvements	Retained and updated
P2 CSIP Optimization	P2 CSIP System Optimization	3 capital projects; potential SVRP upgrades
P3 Modify M1W Recycled Water Plant	Combined into P2 CSIP Optimization	Not a standalone project
P4 CSIP Expansion	P3 New Seawater Intrusion Project/CSIP Expansion	Expanded CSIP or new parallel system serving additional agricultural areas
P5 Seawater Intrusion Extraction Barrier	P4 Brackish Groundwater Restoration Project	Adds desalination, treated supply, and injection
P6 Regional Municipal Supply Project	Combined into P4 BGRP	Treated brackish supply folded into BGRP
P7 Seasonal Release with Aquifer Storage and Recovery	P5 Coastal Injection/Aquifer Storage and Recovery	Modified MCWRA Permit 11043 diversion and injection
P8 Irrigation Water Supply Project	P6 Irrigation Water Supply Project (or Somavia Road Project)	Added uncertainty, still about 3,000 AF/yr

Table 12. Comparison of Cross-Boundary Projects in 2022 GSP and 2027 Amendment 2 draft

2022 Amendment 1	2027 Amendment 2 (draft)	Key Change
R1 Eastside Floodplain Enhancement and Recharge	ES2 Eastside Floodplain Enhancement and Recharge	Retained and updated

2022 Amendment 1	2027 Amendment 2 (draft)	Key Change
R2 Eastside 11043 Diversions – Chualar	ES1 Castroville and Eastside Canals	Modified MCWRA Permit 11043 diversion and recharge concept
R3 Eastside 11043 Diversions – Soledad	Reconfigured within ES1	Not a standalone project
M1 MCWD Demand Management Measures	M1 MCWD Demand Management Measures	Retained; about 2,500 AF/yr in-lieu recharge
M2 Stormwater Recharge Management	M2 Stormwater Recharge Management	Retained and updated
M3 Indirect Potable Reuse	M3 Indirect Potable Reuse	Retained and updated
C1 Corral de Tierra Pumping Allocation and Control		Removed
—	M4 Reservation Road Pilot Desalination Plant (0.3 MGD)	New; about 300 AF/yr potable supply
—	M5 Aquifer Storage and Recovery at Armstrong Ranch	New; up to about 2,500 AF/yr infiltration

CHAPTER 10: GSP IMPLEMENTATION

GSP Amendment 1 Chapter 10 described the first phase of GSP implementation, including filling of data gaps, expanding and enhancing monitoring, and related GSP implementation, as well as further development of PMA through feasibility studies and planning for this 5-year update. It included a start-up budget for these activities, which have been mostly completed. GSP Amendment 2 plans for the next phase of GSP implementation and includes an improved and refined strategy for achieving sustainability. It identifies what PMA or other activities SVBGSA intends to move forward and how SVBGSA plans to advance implementation over the next 5-year evaluation period. Key changes include:

- Addition of Valley-wide Integrated Implementation Strategy (IIS) that includes a preferred portfolio of priority PMAs to achieve or maintain groundwater sustainability throughout SVBGSA's jurisdiction (10.1.1).

- Subbasin-specific section highlighting priority PMAs and how PMAs will enable the Subbasin to avoid undesirable results and mitigate overdraft by 2040 (10.1.2).

- New budget and schedule for the next 5-year GSP implementation period (10.6, 10.7).

New Content:

- The IIS recognizes that the 6 Salinas Valley subbasins are hydraulically connected to varying degrees. The southern subbasins' recharge, and groundwater and surface-water inflows can affect the northern subbasins. Surface water and groundwater management are linked.

- The IIS includes a preferred portfolio of priority PMAs, with other PMAs kept as contingencies and others only included in Chapter 9 (Table 10-1).
    - Priority management actions include Demand Management and Planning, Deep Aquifers allocations, and the Seawater Intrusion Response Plan, as well as targeted management actions for rural residential areas.
    - Priority projects include CSIP optimization, BGRP, and Eastside Recharge Basins (Castroville and Eastside Canals). Other supply and injection projects remain contingency projects.
- A new figure (10-1) shows IIS Portfolio seawater intrusion modeling results, and a new table (10-2) evaluates IIS Portfolio effects on SMC.
- New sections cover the funding strategy, SGMA compliance, coordination and outreach, administration, implementation costs (to be further developed), and the implementation schedule (to be further developed).

Revised Content:

- The structure changes from:

    progress, monitoring, communication, roadmap, 5-year update, start-up budget, and adaptive management

    to:

    IIS, preferred PMA portfolio, funding, compliance, coordination, administration, costs, and schedule.
- Data and monitoring content moves into a combined section on data, monitoring, and SGMA compliance.
- Start-up budget and funding change to an implementation cost and funding section paired with a funding strategy.
- Implementation Actions identified in chapter 9 in Amendment 1 are moved to chapter 10 and are now routine programs. These include well registration, monitoring networks, models, data management system (DMS), annual reporting, 5-year evaluations, agency and land-use coordination, water-quality coordination, and outreach.

Removed Content:

- The standalone roadmap and 5-year update sections are replaced by the IIS and implementation schedule.

ACRONYMS & ABBREVIATIONS

ACS	American Community Survey
AEM	airborne electromagnetic
AF	acre-feet
AF/yr	acre-feet per year
AMBAG	Association of Monterey Bay Area Governments
ASR	aquifer storage and recovery
BGRP	Brackish Groundwater Restoration Project
BMP	best management practice
CalWATRS	California Water Accounting, Tracking, and Reporting System
CASGEM	California Statewide Groundwater Elevation Monitoring
CCWG	Central Coast Wetlands Group
COC	constituent of concern
CSIP	Castroville Seawater Intrusion Project
DAC	disadvantaged community
DDW	Division of Drinking Water
DM	demand management
DWR	California Department of Water Resources
ET	evapotranspiration
eWRIMS	Electronic Water Rights Information Management System
ft/day	feet per day
GDE	groundwater dependent ecosystem
GEMS	Groundwater Extraction Management System
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HCM	hydrogeologic conceptual model
IIS	Integrated Implementation Strategy
ILP	Irrigated Lands Program
ISW	interconnected surface water
M1W	Monterey One Water
MA	management action
MCWD	Marina Coast Water District
MCWDGSA	Marina Coast Water District Groundwater Sustainability Agency
MCWRA	Monterey County Water Resources Agency
mg/L	milligrams per liter
MGD	million gallons per day
MOU	memorandum of understanding
O&M	operation and maintenance

OSWCR	Online System for Well Completion Reports
PMA	project and management action
RMS	representative monitoring site
SGMA	Sustainable Groundwater Management Act
SMC	sustainable management criteria
SRDF	Salinas River Diversion Facility
SVBGSA	Salinas Valley Basin Groundwater Sustainability Agency
SVIHM	Salinas Valley Integrated Hydrologic Model
SVOM	Salinas Valley Operational Model
SVRP	Salinas Valley Reclamation Plant
SVWP	Salinas Valley Water Project
SWIM	Seawater Intrusion Model
SWRCB	State Water Resources Control Board
USGS	U.S. Geological Survey
UWMP	urban water management plan
WY	water year